

Consortium for Site Characterization Technology

Developers face many problems moving new site characterization and monitoring technologies from prototype to routine use. These include convincing regulators and customers the product meets its claims; lack of credible performance data; access to unbiased third parties to evaluate the data; and identifying test sites. The government's interest in achieving national environmental goals faster, better, and less expensively warranted a united effort to address these problems.

The **Consortium** is a partnership between the DoD, DOE, EPA, and the private sector whose goal is to increase the use of innovative characterization technologies in assessing contaminated sites. The CSCT will identify, demonstrate, evaluate, verify and transfer information about innovative and alternative monitoring, measurement, and site characterization technologies to developers, users, and regulators.

How does the Process Work?

The **Consortium** is designed around a series of guidance manuals which define how a demonstration will be conducted and how the data will be evaluated. The developer is expected to make use of these documents by working with the Consortium staff to develop an acceptable demonstration plan. The purpose of the demonstration plan is to design a field exercise that will allow the performance claims for the technology to be evaluated in an objective and scientifically sound manner. The developer will be expected to conduct the demonstration at suitable field sites. The Consortium will support the developer in selecting the sites, approving the demonstration plan, and auditing the demonstration. The Consortium will also provide for data interpretation and report preparation, and issue a verification statement through EPA.

Field-Portable X-Ray Fluorescence (FPXRF)

What it is: FPXRF is a site-screening procedure using a small portable instrument that addresses the need for a rapid turnaround, low-cost method for on-site analysis of inorganic contaminants. By bombarding a sample with energy, the instrument causes an electronic instability. As the instability relaxes to a more stable energy level, X-ray fluorescence is emitted. The detector senses and counts this spectrum of radiation and identifies the atom. The FPXRF instrument can quantify 18 of the 24 elements on EPA's Inorganic Target Analyte List. Typical site surveys using this technique take about 3 days rather than the traditional 20-45.

When/where demonstrated:

Tacoma, WA

April 10-14, 1995

A 67-acre site at a former ASARCO lead/copper smelter facility with arsenic, copper, and lead contamination. The site is situated on the shore of Commencement Bay. This is part of the Nearshore/Tideflats Superfund site.

Davenport, IA

April 24-28, 1995

Former rock quarry used for disposal of demolition debris, automotive, and scrap metal as well as recycled lead acid batteries. Primary contamination is chromium, lead, and zinc.

Who participated:

- Metorex, Inc.
- Scitec Corp.
- TN Spectrace Corp.
- Niton Corp.
- HNU, Inc.

For more information on the Consortium contact:

EPA-542-F-96-009a
April 1996

Mr. Eric Koglin/Dr. Steve Billets
EPA National Exposure Research Laboratory
Characterization Research Division
P. O. Box 93478
Las Vegas, Nevada 89193-3478
702-798-2432; fax 798-2261
702-798-2232; fax 798-2261
Internet:koglin.eric@wpmail.las.epa.gov
Internet:billets.stephen@wpmail.las.epa.gov

Mr. Daniel Powell
EPA Technology Innovative Office (5102G)
401 M Street, SW
Washington, DC 20460
703-603-7196; fax 603-9135
Internet:powell.dan@epamail.epa.gov

Technology Verification Program

Field Portable X-Ray Fluorescence (FPXRF)

The Consortium for Site Characterization Technology is supported by the Environmental Technology Initiative and Strategic Environmental Research and Development Program.

